

IN THE CLAIMS

44. (currently amended) An angular velocity sensor for detecting an angular velocity component comprising:

an oscillator having mass;

a sensor casing for accommodating the oscillator therewithin;

a flexible member for connecting the oscillator to the sensor casing so that the oscillator can be moved with respect to the sensor casing; ~~and~~

capacitance elements including a first electrode provided on a surface of the oscillator and a second electrode provided on a surface of a fixed member fixed to the sensor casing; and

an excitation element for oscillating the oscillator.

45. (previously presented) An angular velocity sensor for detecting an angular velocity component about a Z-axis in an XYZ three-dimensional coordinate system, the sensor comprising:

an oscillator having mass;

a sensor casing for accommodating the oscillator therewithin;

a flexible member for connecting the oscillator to the sensor casing so that the oscillator can be moved with respect to the sensor casing with at least a degree of freedom along an XY-plane in the coordinate system;

excitation capacitance elements for oscillating the oscillator in the X-axis direction based on Coulomb force, said excitation capacitance elements including an electrode provided on a surface of the oscillator and an electrode provided on a surface of a fixed member fixed to the sensor casing; and detection capacitance elements for detecting a displacement of the oscillator in a Y-axis direction, said detection capacitance elements including an electrode provided on a surface of the oscillator and an electrode provided on a surface of the fixed member so that an angular velocity component about the Z-axis can be obtained based on the detected displacement.

46. (previously presented) An angular velocity sensor for detecting an angular velocity component about a Z-axis in an XYZ three-dimensional coordinate system, the sensor comprising: an oscillator having mass; a sensor casing for accommodating the oscillator therewithin;

a flexible member for connecting the oscillator to the sensor casing so that the oscillator can be moved with respect to the sensor casing with at least a degree of freedom along an XY-plane in the coordinate system;

excitation capacitance elements and detection capacitance elements, each including a first electrode provided on a surface of the oscillator and a second electrode provided on a surface of a fixed member fixed to the sensor casing;

a voltage supplying circuit to apply an a. c. signal to the excitation capacitance elements so that the oscillator is oscillated in the X-axis direction based on Coulomb force; and

a capacitance detecting circuit to detect a capacitance value of the detection capacitance elements so that a displacement of the oscillator in a Y-axis direction is detected and an angular velocity component about the Z-axis can be obtained based on the detected displacement.

47. (previously presented) An angular velocity sensor according to claim 46, wherein the oscillator and the flexible member are made of silicon.

48. (previously presented) An angular velocity sensor according to claim 47, wherein the oscillator is made of a silicon substrate.